

28th March, 2024

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Work Place Link: <https://www.nitrkl.ac.in/FProfile.aspx?e=beheraajit>

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Google Scholar: <https://scholar.google.co.in/citations?user=R-G7pSoAAAAJ&hl=en>

Web of science: <https://www.webofscience.com/wos/author/record/190963>

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=56539505200>

Research Gate: https://www.researchgate.net/profile/Ajit_Behera4

Academia: <http://nitrkl.academia.edu/AjitBehera>

Summary:

No of Publication: 182+

Citation in Google Scholar: 2023+ (h-index=23, i10-index=60)

Book	Book Chapter	SCI + Scopus Journal	Int. conf. Paper	Nat. Conf. Paper	Patent	R&D Projects	Consultant Project	Conference, workshop, short term course conducted	Award
18	55	67 + 8	22	16+	04	04	11	07	05

Supervision:

	PhD			M. Tech	M. Tech Dual Degree	B. Tech
	Institute PhD	Sponsored PhD	Executive PhD			
Completed	03	00	00	06	03	18
Ongoing	02	01	03	0	01	04

RESEARCH INTERESTS

- Smart materials
- NiTi-alloys
- 3D & 4D Print Additive manufacturing
- Magnetron sputtered Thin Film
- Plasma surface Engineering
- Characterization of materials
- Nanotechnology
- Cryo-treatment
- Utilization of Industrial Waste

EDUCATIONAL QUALIFICATION

Year	Education
2016	Ph. D., IIT Kharagpur (Metallurgical & Materials Engineering) Specialization: Synthesis of Nanostructure Multilayered Ni/Ti Thin Film by Magnetron Sputtering and Effect of Annealing
2012	M. Tech, NIT Rourkela (Metallurgical & Materials Engineering) Specialization: Processing and Characterization of Plasma Spray coatings of Industrial Waste and Low Grade Ore mineral on metal substrates
2009	B. Tech, IGIT Sarang (Metallurgical & Materials Engineering)

PROFESSIONAL EXPERIENCE (8.1 yr)

NATIONAL INSTITUTE OF TECHNOLOGY, JAMSHEDPUR Assistant Professor	January '15-July '15
NATIONAL INSTITUTE OF TECHNOLOGY, ROURKELA Assistant Professor	July '15- Cont...
AMPRE ENGG. PVT. LTD. (SART-UP INDIA) Director	January '23- Cont...

COURSE TOUGHT (B. Tech and M. Tech)

- **Advance Processing of Materials** (B. Tech & M. Tech Dual degree, NIT-Rkl, 2023-Cont.)
 - **Advanced Materials** (B. Tech & M. Tech Dual degree, NIT-Rkl, 2015-2023)
 - **Materials Engineering** (M. Tech, NIT-Rkl, 2015-Cont.)
 - **Materials Science & Engineering** (B. Tech, NIT-Jsr, 2015)
 - **Heat Treatment** (B. Tech, NIT-Jsr, 2015)
 - **Physical Metallurgy** (B. Tech, NIT-Jsr, 2015)
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EDITORIAL BOARD/GUEST EDITOR/MANAGING EDITOR OF JOURNALS

- Executive Guest editor, Applied Surface Science Advances, (2023) Elsevier, <https://www.sciencedirect.com/journal>.
 - Managing Editor, High Temperature Materials and Processes, Focus of Hot Deformation of Metal and High Entropy Alloys (2023). <https://www.editorialmanager.com/htmp/default2.aspx>
 - Associate editor, Journal of Process Mechanical Engineering, Adoptable materials for the sustainability of multifunctional structure (2022), <https://mc.manuscriptcentral.com/jpme>.
 - Guest editor, Applied Surface Science Advances, <https://www.sciencedirect.com/journal/applied-surface-science-advances/special-issue/10V9R8WSWVG>, (2021) Elsevier.
 - Managing Editor, Materials Today Proceeding, Volume 88, Part 1, Pages 1-168 (2023), (<https://www.sciencedirect.com/journal/materials-today-proceedings/vol/88/part/P1>), Elsevier.
 - Guest editor, Coatings, Special issue on "Smart Material Coatings", MDPI. https://www.mdpi.com/journal/coatings/special_issues/smart_coatings
 - Guest editor, Int. J. of Materials and Product Technology, 2021 Vol. 62 No.1/2/3, <https://www.inderscience.com/info/inarticletoc.php?jcode=ijmpt&year=2021&vol=62&issue=1/2/3>, Inder Science
 - Managing Editor, Materials Today Proceeding, Volume 33, Part 8, Pages 4919-5770 (2020), (<https://www.sciencedirect.com/journal/materials-today-proceedings/vol/33/part/P8>), Elsevier.
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ACTIVE REVIEWER OF JOURNALS

- **Project Proposal Reviewer:** 1) DST SERB Sponsored Proposals; 2) OSPCB
- **Book Reviewer:** 1) Springer, 2) CRC Press, 3) Wiley Scrivener Publishing, 4) ACS, 5) IGI Global
- **Journal Reviewer:** 1) Scientific Reports, Nature, 2) Materials & Design, Elsevier (IF:9.417), 3) Journal of Alloys and Compounds, Elsevier (IF:6.371); 4) The Journal of Physical Chemistry Letters, ACS (IF:6.475); 5) Journal of Materials Chemistry C, RSC (IF: 8.067); 6) Advanced Engineering Materials, Wiley (IF:4.122), 7) Surface and Coatings Technology, Elsevier (IF:5.4), 8) Wear, Elsevier (IF:3.892), 9) Metallurgical and Materials Transactions A, Springer (IF:2.8); 10) Metallurgical and Materials Transactions B, Springer (IF:2.566); 11) Journal of Materials Research, Springer (IF: 2.909); 12) Transactions of the Indian Institute of Metals, Springer (IF:1.6); 13) Annalen der Physik, Wiley (IF:2.987); 14) IEEE Sensors Journal, IEEE (IF:4.3); 15) IEEE Transactions on Plasma Science, IEEE (IF:1.22); 16) Plasma Science and Technology, IOP

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Science (IF:1.7); **17** Journal of Cleaner Production, **Elsevier** (IF:11.072); **18**, **IONICS**, **Springer** (IF:2.8); **17** Tribology Transactions, **Taylor & Francis** (IF:2.1); **19** Waste Management & Research, **SAGE Journal** (IF:3.9)

HONORS/AWARDS

- Build Bharat Leadership award-2023
 - Utkal Prativa Ratna Samman-2023
 - Dr. APJ Abdul Kalam Professional Achiever Award-2023
 - Young Engineer Award-2022
 - Yuva Rattan Award-2020
 - C.V. Raman National Award-2018
 - Young Faculty Award-2017
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PATENT

5. **Ajit Behera**, Priyabrata Mallick, Sourav Agarwal and Jitesh Sharma, "System and method for cooling aeroturbine blade structure", Application No. 202331027855, Date of file: 17/04/2023.
 4. Dipen Kumar Rajak, **Ajit Behera**, "Digital table calendar embedded with smart technologies thereof" Application No. 202221006872, Date of file: 09/02/2022, Publication number: 09/2022.
 3. Dipen Kumar Rajak, Abhijit Rajan, Shivesh Kumar, Dr Ashwini Kumar, **Ajit Behera**, Kundan Bharti, Dwesh K. Singh, Parimal Anil Patil, "Multi-Functional Induction Furnace for Heating and Melting of Materials Method and Thereof", Patent no.: 202121048186, 2021, Date of file: 22/10/2021, Date of Publish: 29/10/2021.
 2. **Ajit Behera**, R. Manik, K. Behera, "Thermal Encoding Shape Memory Alloys (TESMA)", Patent application no: 202031008991, Date of filling: 03/03/2020, Date of Published: 15/05/2020.
 1. Dipen Kumar Rajak, **Ajit Behera**, Ashwini Kumar, Partiksha Hiralal Wagh, Parimal Anil Patil, "Modern handi with smart technique", patent no: 202021042425 A, 2020, Date of filing: 30/09/2020, Publication Date: 30/10/2020.
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PUBLICATIONS

Books

1. **Ajit Behera**, **TEXT BOOK**: "Advanced Materials", 1st edition, **1350 pages**, ISBN: 978-3-030-80359-9, **Springer Nature**, **2022**, <https://www.springer.com/gp/book/9783030803582>
2. S. Thomas, **Ajit Behera**, T. Nguyen, Book titled "Nickel-Titanium Smart Hybrid Materials: From Micro- to Nano-structured Alloys for Emerging Applications", **Elsevier Publisher**, ISBN: 9780323911733, **500 pages**, **January 2022**, <https://www.elsevier.com/books/nickel-titanium-smart-hybrid-materials-from-micro-to-nano-structured-alloys-for-emerging-applications/thomas/978-0-323-91173-3>
3. Renu Kumari, J. Dutta Majumdar, and **Ajit Behera**, Book titled: Recent Advances in Manufacturing Process, **ISBN**: 978-981-16-3686-8, 1st edition, **Springer**, **2021**, <https://www.springer.com/gp/book/9789811636851#aboutAuthors>
4. **Ajit Behera**, T. A. Nguyen, R. Gupta, **Book** titled "Smart 3D Nanoprinting: Fundamentals and Applications", **CRC publisher**, Taylor and Francis Catalogue # 461966, **ISBN: 9781032038612**, **550 pages**, **2021**.
5. A. Kumar, **Ajit Behera**, T. A. Nguyen, M. Bilal, R. K. Gupta, Book titled: Antiviral and Antimicrobial Smart Coatings: Fundamentals and Applications, 1st edition, **Elsevier Publisher**, **2022**, **ISBN: 9780323992916**.
6. R. Gupta, **Ajit Behera**, S. Farhad, T. A. Nguyen, Book titled "Advanced Flexible Ceramics: Design, Properties, Manufacturing, and Emerging Applications, **Elsevier Publisher**, **ISBN: 9780323988247**, **2023**.

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7. R. K. Gupta, A. Motallebzadeh, S. Kakooei, T. A. Nguyen, **Ajit Behera**, Book titled: Advanced Ceramic Coatings: Fundamentals, Manufacturing and Classification, 1st edition, *Elsevier Publisher*, ISBN: 9780323996594, 2023.
8. R. K. Gupta, A. Motallebzadeh, S. Kakooei, T. A. Nguyen, **Ajit Behera**, Book titled: Advanced Ceramic Coatings for Biomedical Applications, 1st edition, *Elsevier Publisher*, ISBN: 9780323996266, 2023.
9. R. K. Gupta, A. Motallebzadeh, S. Kakooei, T. A. Nguyen, **Ajit Behera**, Book titled: Advanced Ceramic Coatings for Emerging Applications, 1st edition, *Elsevier Publisher*, 2023, ISBN: 9780323996242.
10. R. K. Gupta, A. Motallebzadeh, S. Kakooei, T. A. Nguyen, **Ajit Behera**, Book titled: Advanced Ceramic Coatings for Energy Applications, 1st edition, *Elsevier Publisher*, ISBN: 9780323996204, 2023.
11. **Ajit Behera**, Dr. B. Swain and Dr. D. Nayak, Book titled: Surface Engineering of Biomaterials Synthesis and Processing Technique, CRC publisher, 2024, ISBN: 9781032552828.
12. **Ajit Behera**, K. K Saxena, D. K. Rajak, S. Sehgal, Book titled: Multi-scale and Multifunctional Coatings and Interfaces for Tribological contacts, *CRC publisher*, 2024, ISBN: 9781032555379 (In Production).
13. **Ajit Behera**, A. K. Nayak, R. K. Mohapatra, A. A. Rabaan, Book titled: Smart micro and nanomaterials for Drug Delivery, CRC publisher, 2024, ISBN: 781032555089 (In Production).
14. **Ajit Behera**, A. K. Nayak, R. K. Mohapatra, A. A. Rabaan, Book titled: Smart micro and nanomaterials: For Pharmaceutical Applications, *CRC publisher*, 2024, ISBN: 781032555089 (In Production).
15. **Ajit Behera**, Jayanta Kumar Patra, Advanced Nanomaterials in Bioimplant: Processing, structures, properties and applications, *Elsevier publisher*, ISBN: 9780443273780, 2024 (In Production).
16. **Ajit Behera**, T. A. Nguyen, Multi-material additive manufacturing, *Elsevier publisher*, 2024, ISBN: 9780443292286 (In Production).
17. Ajay Kumar, P.L. Meenenze, **Ajit Behera**, Micro- and Nano-Engineering at Surface and Interface, 1st edition, ISBN: 9780443335532, *Elsevier Publisher*, 2026 (In Production).
18. S. Potnuru, **Ajit Behera**, Sustainable Innovations in Industry 5.0, Sixth International Conference on Intelligent Manufacturing and Energy Sustainability (ICIMES 2024), Springer (Accepted).

International journals:

1. Binayak Mishra, Sambit Kumar Mohapatra, Dermot Brabazon, Ajit Behera, A Contemporary Review of Material's Processing by Equal-Channel Angular Pressing, *Int. J. Interactive Design and Manufacturing*, 2024 (accepted)
2. Pradhan D D, Chakraverty A P, **Behera A**, Beura S, Mohanty U K. Mechano-thermal assessment of outdoors aged hybrid glass fibre reinforced polymer composite filled with fly ash as industrial waste. *Journal of Reinforced Plastics and Composites*. 2024; 0(0). doi: 10.1177/07316844241231522.
3. R. K. Mohapatra S. N. Das, S. K. Biswal, **Ajit Behera**, H. Belbsir, K. El-Hami, Experimental and rheological modelling on the stabilization of iron ore slurry using a biosurfactant extracted from aloe barbadensis miller, *bulletin of chemical society of Ethiopia*, 2024 (accepted).
4. Akash Mishra, **Ajit Behera***, A critical review on 4D printing and their processing parameters, *Int. J. Interactive Design and Manufacturing*, 2023, <https://link.springer.com/article/10.1007/s12008-023-01685-y>.
5. J. Parida, S. C. Mishra, D. K. Satapathy, B. C.G. Marupalli, **Ajit Behera***, Shape Memory Behavior and Tribological Analysis of Heat-Treated NiTiFe Alloy, *Journal of Materials Engineering and Performance*, 2023, <https://doi.org/10.1007/s11665-023-08928-9>

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6. Swadhin K. Patel, P. Dubey, R. Roshan, **Ajit Behera**, Elastic and transformation behaviour of equiatomic NiTi shape memory alloys fabricated at different sintering temperatures, *Materials Today Communications*, **2023**, <https://doi.org/10.1016/j.mtcomm.2023.107203>
7. M. Priyadarshini, S. Pradhan, A. Barua, **Ajit Behera**, and S. Kanchan, Experimental Analysis of Wire-EDM on Sub-Cooled Low-Carbon Tool Steel using Hybrid MARCOS Method and Honey Badger Algorithm, *Surface Review and Letters*, **2023**, <https://doi.org/10.1142/S0218625X24500495>
8. R. Roshan, Swadhin K. Patel, P. Mallick, **Ajit Behera**, Solid particle erosion and scratch wear behaviour of NiTi smart alloy modified mild steel using atmospheric plasma spray technology at different substrate preheating temperatures, *Journal of Materials Engineering and Performance*, **2023**, <https://doi.org/10.1007/s11665-023-08583-0>
9. J. Parida, S. C. Mishra, and **Ajit Behera**, Effect of Fe addition on phase evolution, microstructure and properties of Ti50Ni50-XFeX alloy, *Materials Science and Technology*, Vol. 39, Issue 18, **2023**, <https://doi.org/10.1080/02670836.2023.2240102>
10. R. P. Dalaia, S. P. Mohapatra, D. Nayaka, D. K. Mishra, **Ajit Behera**, Microstructure, mechanical, and tribological relationship in Cu-12Al-Ni alloy with respect to the variation of Ni content, *Journal of Materials Engineering and Performance*, **2023**, <https://doi.org/10.1007/s11665-023-08538-5>
11. J. Parida, S. C. Mishra, B. C. G. Marupalli, Metallurgical and Materials Engineering Department, Indian Institute of Technology, Kharagpur, **Ajit Behera**, Fabrication of nickel-titanium-iron shape memory alloys by powder metallurgy route and analyses of their physical and mechanical behavior, *Powder Metallurgy*, **2023**, <https://doi.org/10.1080/00325899.2023.2235143>
12. J. Parida, S. C. Mishra, **Ajit Behera**, Microstructure and Mechanical Properties of Ti50Ni(50-X)FeX Alloys Fabricated by Powder Metallurgy Process, *Metallurgical and Materials Transactions A*, **2023**, <https://doi.org/10.1007/s11661-023-07037-5>
13. S. Pradhan, V P. Reddy, M. Priyadarshini, P. Singhal, A. Barua, **Ajit Behera**, C. Prakash, K. K. Saxena, Sayed M Eldin, Performance Investigation of Cryogenic Treated-Double Tempered Cutting Inserts in Dry Turning of Ti-6Al-4V Alloy, *Journal of Materials Research and Technology*, **2023**, <https://doi.org/10.1016/j.jmrt.2023.06.165>.
14. S. Patro, K. Saxena, **Ajit Behera**, Effect of Annealing Temperature and Thickness of Magnetron Sputtered Ni/Ti Film on Its Microstructure and Nanoindentation Behavior, *Metal science and heat treatment*, **2023**, <https://doi.org/10.1007/s11041-023-00909-y>
15. Vishwanatha H M, K. Saxena, A. Pramanik,; S. Dixit, **Ajit Behera**, Cryo-treatment and corrosion studies of Nickel-Titanium Shape Memory Alloy, *Journal of Process Mechanical Engineering*, **2023**, <https://doi.org/10.1177/09544089231159250>
16. Ayush Sinha, D. K. Rajak, N. B. Shaik, R. K. Mohapatra, K. K. Saxena, R. Singh, Jinyang Xu, **Ajit Behera**, A Review on 4D printing of Nickel-Titanium Smart alloy Processing, the effect of major parameters and their biomedical applications, *Journal of Process Mechanical Engineering*, **2023**, <https://doi.org/10.1177/09544089231154416>
17. R. K. Mohapatra, Kuldeep Dhama Sarika Verma, Venkataramana Kandi, Ashish K. Sarangi, Veronique Seidel, Subrata Narayan Das, **Ajit Behera**, Hardeep Singh Tuli, Ashwani K. Sharma, The SARS-CoV-2 Omicron Variant and its Multiple Sublineages: Transmissibility, Vaccine Development, Antiviral Drugs, Monoclonal Antibodies, and Strategies for Infection Control – a Review, *ChemistrySelect*, **2023**, <https://doi.org/10.1002/slct.202201380>
18. **Ajit Behera**, K. Saxena, C. Prakash, A. Pramanik, J. Haider, A. Basak and S. Shankar, Modeling and simulation of magnetron sputtered NiTi thin film deposition by SRIM/TRIM, *Surface Review and Letters*, **2023**, <https://doi.org/10.1142/S0218625X2340005X>

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19. J. Parida, S. C. Mishra, ***Ajit Behera**, Synthesis and Characterization of Ti50Ni(50-X)FeX alloy produced by mechanical alloying and pressure-less sintering, *Metals and Materials International*, 11 December **2022**, <https://doi.org/10.1007/s12540-022-01277-7>
20. Vishwanatha H M, C. Prakash, S. Hiremath, D. S. Chiniwar, Z. Singh, **Ajit Behera**, K. K Saxena, Modelling and simulation of lightweight hollow pins as a substitution for solid shear pins used for assembly joints in aerospace applications, *International Journal on Interactive Design and Manufacturing*, 31 October **2022**, <https://doi.org/10.1007/s12008-022-01081-y> .
21. V. Vijayan, H. M. Vishwanatha, M. K. Swetha, K. K. Saxena, K. K. Saxena, **Ajit Behera**, An investigation on the cause for the formation of blisters in the extruded aluminum channels for ladder application, *International Journal on Interactive Design and Manufacturing*, 08 November **2022**, <https://doi.org/10.1007/s12008-022-01093-8> .
22. R. Roshan, K. S. Arora, ***Ajit Behera**, Effect of substrate temperature on the surface and interface properties of NiTi Atmospheric Plasma Sprayed coating, *Surface Topography: Metrology and Properties*, **2022**, <https://doi.org/10.1088/2051-672X/ac9072>
23. N. E. Dan, P. B. Hussain, N. B. Shaik, B. Bakhavatchalam, R. K. Mohapatra, **Ajit Behera**, Improved Surface Morphology and Corrosion Resistance Performance of 2205 Duplex Stainless Steel by Low Temperature Gas Nitriding, *Journal of Bio- and Tribo-Corrosion*, 8, 100, **2022**, <https://doi.org/10.1007/s40735-022-00698-6>.
24. T. R. chary, S. potnuru, R. J. Immanuel, K. K. Saxena, D. Buddhi, **Ajit Behera**, Dissimilar metal welding on Mg AZ31 and AA 6061 alloys by using friction stir welding, *Int. J. on Interactive Design and Manufacturing*, May **2022**, <https://doi.org/10.1007/s12008-022-01036-3>.
25. S. K. Samal, Vishwanatha H M, K. K. Saxena, A. Behera, T. A. Nguyen, **Ajit Behera***, C. Prakash*, S. Dixit*, K. A. Mohammed, 3D-printed Satellite Brackets: Materials, Manufacturing and Applications, *crystals*, 25 July **2022**, 12, 1148. <https://doi.org/10.3390/cryst12081148>.
26. R. K. Mohapatra, R. K v Prathima, S. Mishra , As. K. Sarangi , M. K. Pradhan, P. K. Mohapatra, **Ajit Behera**, K. Dhama, Emerging novel sub-lineage BA.2.75: The next dominant omicron variant?, *International Journal of Surgery*, **2022**, <https://doi.org/10.1016/j.ijsu.2022.106835>.
27. Vishwanatha H M, C. Prakash, N. K. Kottana, S. Sengupta, K. K Saxena, **Ajit Behera**, S. Ghosh, Investigation on synergetic effect of non-contact ultrasonic casting and mushy state rolling on microstructure and hardness of Al-Si-Al₂O₃ nanocomposites, *Int J Interact Des Manuf*, **2023**, <https://doi.org/10.1007/s12008-022-00986-y>
28. Balram, Naveenkumar, Vgunda, Kuldeep Saxena, Msomiv, **Ajit Behera**, Surface modification of aluminum alloy 6061 by embedding B₄C particles via friction stir processing, *Materials Research Express*, **2022**, Materials Research Express, Vol. 9, No 5, 2022, <https://doi.org/10.1088/2053-1591/ac6da7>.
29. M. Priyadarshini, H. M. Vishwanatha, C. K. Biswas, P. Singhal, D. Buddhi, Ajit Behera, Effect of grey relational optimization of process parameters on surface and tribological characteristics of annealed AISI P20 tool steel machined using wire EDM, *International Journal on Interactive Design and Manufacturing*, **2022**, <https://doi.org/10.1007/s12008-022-00954-6>
30. L. Das, R. Nayak, K. K Saxena, J. Nanda, Sh. P. Jena, **Ajit Behera**, S. Sehgal, C. Prakash, S. Dixit, D. S. Abdul-Zahra, Determination of Optimum Machining Parameters for Face Milling Process of Ti6Al4V Metal Matrix Composite, *Materials*, 15, 4765, **2022**, <https://doi.org/10.3390/ma15144765>
31. B. Swain, S. K. Bhuyan, S. S. Mohapatra, D. K. Rajak, **Ajit Behera**, C. I. Pruncu, Adhesion strength investigation of plasma sprayed NiTi coating, *Engineering Failure Analysis*, Vol. 140, **2022**, 106368, <https://doi.org/10.1016/j.engfailanal.2022.106368>.
32. B. Swain, S. Chatterjee, S. S. Mohapatra, **Ajit Behera**, Microstructural Investigation, mechanical properties evaluation and parametric optimization of APS NiTi coating, *Journal of materials engineering and performance*, **2022**, <https://doi.org/10.1007/s11665-022-06834-0>

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33. S. K. Patel, **Ajit Behera**, Evolution of Phases and their Influence on Shape Memory Effect by Varying Sintering Parameters of NiTi Alloys, *Metals and Materials International*, **2022**, <https://doi.org/10.1007/s12540-021-01166-5>
34. **Ajit Behera**, D. Nayak, Smart Material Surface Science and application (SMASSA): A most awaited journey in smart technology, *Applied Surface Science Advances*, Vol. 9, **2022**, 100242, <https://doi.org/10.1016/j.apsadv.2022.100242>
35. R. K. Mohapatra, S. Kuppili, T. Kumar Suvvari, V. Kandi, **Ajit Behera**, S. Verma, K. Zahan, S. K. Biswal, T. H. Al-Noor, M. M. El-ajaily, A. K. Sarangi, K. Dhama, SARS-CoV-2 and its variants of concern including Omicron: looks like a never ending pandemic, *Chemical Biology & Drug Design*, Volume99, Issue5, **2022**, 769-788, <https://doi.org/10.1111/cbdd.14035>.
36. A. Sinha, B. Swain, A. Behera, P. Mallick, S. K. Samal, Vishwanatha H M, **Ajit Behera**, A Review on the Processing of Aero-Turbine Blade Using 3D Print Techniques, *Journal of Manufacturing and Materials Processing*, **2022**, 6(1), 16, <https://doi.org/10.3390/jmmp6010016>.
37. M. Priyadarshini, Ajit Behera, C. K. Biswas, Dipen Kumar Rajak, Experimental Analysis and Mechanical Characterization of AISI P20 Tool Steel Through Heat-Treatment Process, *J Bio Tribo Corros*, 8:3, **2022**, <https://doi.org/10.1007/s40735-021-00607-3>.
38. B. Swain, M. Priyadarshini, S. S. Mohapatra, R. K. Gupta, **Ajit Behera**, Parametric optimization of atmospheric plasma spray coating using fuzzy TOPSIS hybrid technique, *Journal of Alloys and Compounds*, **2021**, Volume 867, 25, 159074, **2021**, <https://doi.org/10.1016/j.jallcom.2021.159074>.
39. B. Swain, A. R. Pati, P. Mallick, S. S. Mohapatra, **Ajit Behera**, Development of Highly Durable Superhydrophobic Coatings by One-Step Plasma Spray Methodology, *J Therm Spray Tech*, 30, 405-423, **2021**, <https://doi.org/10.1007/s11666-020-01132-4>.
40. B. Swain, P. Mallick, R. Gupta, S. S. Mohapatra, G. Yasin, N. A. Nguyen, **Ajit Behera**, Mechanical and Tribological Properties Evaluation of Plasma-Sprayed Shape Memory Alloy Coating, *Journal of Alloys and Compounds*, Volume 863, 15 May 2021, 158599, **2021**, <https://doi.org/10.1016/j.jallcom.2021.158599>.
41. B. C. G. Marupalli, **Ajit Behera**, S. Aich, A critical review on Nickel-Titanium thin film shape memory alloy fabricated by Magnetron Sputtering and influence of process parameters, *Transactions of the Indian Institute of Metals*, **2021**, <https://doi.org/10.1007/s12666-021-02418-z>.
42. B Swain and **Ajit Behera**, Effect of powder feed rate on adhesion strength and microhardness of APS NiTi coating: a microstructural investigation, *Surface Topography: Metrology and Properties*, **2021**, Vol. 9, No., <https://doi.org/10.1088/2051-672X/ac0a38>.
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48. S. D. Kumar, J. Ghose, S. K. Jha, **Ajit Behera**, A. Mandal, **Chapter Title:** "Optimization and Simulation of Additive Manufacturing Processes: Challenges and Opportunities, **Book title:** "Additive Manufacturing Applications for Metals and Composites", *IGI Publisher*, 2020, page 23, DOI: [10.4018/978-1-7998-4054-1.ch010](https://doi.org/10.4018/978-1-7998-4054-1.ch010).
49. **Ajit Behera**, **Chapter Title:** "Processes and Application in Additive manufacturing: Practices in aerospace, automobile, medical and electronic industries, **Book title:** "Additive Manufacturing Applications for Metals and Composites", *IGI Publisher*, page 25-47, 2020, DOI: [10.4018/978-1-7998-4054-1.ch002](https://doi.org/10.4018/978-1-7998-4054-1.ch002).
50. **Ajit Behera**, P. Mallick and S. S. Mohapatra, "**Chapter Title:** Nanocoatings for anticorrosion: An introduction ", **Book title:** Corrosion Protection at the Nanoscale, *Elsevier publisher*, ISBN no: 978-0-12-819359-4, Pages 449-457, 2020, <https://doi.org/10.1016/B978-0-12-819359-4.00013-1>.

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51. **Ajit Behera** and P. Mallick, **Chapter Title:** Application of nanofibers in aerospace industry **Book title:** Fiber-Reinforced Nanocomposites: Fundamentals and Applications, *Elsevier publisher*, ISBN: 978-0-12-819904-6, **2020**, <https://doi.org/10.1016/B978-0-12-819904-6.00020-7>.
52. **Ajit Behera**, B. Swain, and D. K. Sahoo, **Chapter Title:** Fiber reinforced ceramic matrix nanocomposites, **Book title:** Fiber-Reinforced Nanocomposites: Fundamentals and Applications, *Elsevier publisher*, ISBN: 978-0-12-819904-6, Pages 359-368, **2020**, <https://doi.org/10.1016/B978-0-12-819904-6.00016-5>.
53. **Ajit Behera**, S. Patel, M. Priyadarshini, **Chapter Title:** Fibre reinforced Metal Matrix Nano-composites, **Book title:** Fiber-Reinforced Nanocomposites: Fundamentals and Applications, *Elsevier publisher*, ISBN: 978-0-12-819904-6, Pages 147-156, **2020**, <https://doi.org/10.1016/B978-0-12-819904-6.00007-4>.
54. S. K. Patel, B. K. Swain, **Ajit Behera** and S. S. Mohapatra, **Chapter Title:** Metallic Glasses: A Revolution in Material Science, **Book title:** Metallic Glasses, ISBN: 978-1-78985-488-6, *InTech Press*, 2020, DOI: [10.5772/intechopen.90165](https://doi.org/10.5772/intechopen.90165)
55. **Ajit Behera**, S. S. Mohapatra, D. K. Verma, **Chapter Title:** “Nanomaterial: Fundamental Principle and Application”, **Book title:** Nanotechnology and Nanomaterial applications in food, health and biomedical science, **2019**, **CRC press**, ISBN: 9781771887649, <https://www.taylorfrancis.com/chapters/edit/10.1201/9780429425660-4/nanomaterials-fundamental-principle-applications-ajit-behera-soumya-sanjeeb-mohapatra-deepak-kumar-verma>.
56. **Ajit Behera**, S. S. Mohapatra, **Chapter title:** “Challenges in Recovery of Valuable and Hazardous Elements from Bulk Coal Fly ash and Options for Increasing Fly ash Utilization”, **Book title:** Coal Fly Ash Beneficiation- Treatment of Acid Mine Drainage with Coal Fly Ash, **2017**, *InTech Press*, ISBN 978-953-51-5228-6, <https://www.intechopen.com/chapters/55912>.

International Conferences

1. J. Parida, S. C. Mishra, **Ajit Behera**, Fabrication of TiNiFe alloy produced by mechanical alloying and conventional sintering, *Materials Today: Proceedings*, **2023**, <https://doi.org/10.1016/j.matpr.2023.05.563>.
2. S. K. Sahu, D. K. Mishra, **Ajit Behera**, R. P. Dalai, An overview on the effect of heat-treatment and cooling rates on Ni-based superalloys, *Materials Today: Proceedings*, **2021**, <https://doi.org/10.1016/j.matpr.2021.07.146>.
3. R. Manik, **Ajit Behera**, Thermal encoding using shape memory alloy, *Materials Today: Proceedings*, **2020**, <https://doi.org/10.1016/j.matpr.2020.04.529>
4. S. K. Patel, B. Behera, B. Swain, R. Roshan, D. Sahoo, **Ajit Behera**, A review on Ni-Ti alloys for biomedical applications and their Biocompatibility, *Materials Today: Proceedings*, **2020**, <https://doi.org/10.1016/j.matpr.2020.03.538>
5. S. K. Patel, B. Swain, R. Roshan, N. K. Sahu, **Ajit Behera**, A brief review of shape memory effects and fabrication processes of NiTi based alloys, *Materials Today: Proceedings*, **2020**, <https://doi.org/10.1016/j.matpr.2020.03.539>
6. B. Swain, P. Mallick, S. Patel, R. Roshan, S. S. Mohapatra, S. Bhuyan, M. Priyadarshini, B. Behera, S. Samal, **Ajit Behera**, Failure analysis and materials development of gas turbine blades, **2020**, <https://doi.org/10.1016/j.matpr.2020.02.859>.
7. J. Parida, S. C. Pattnaik, S. C. Mishra, **Ajit Behera**, Effect of heat treatment on wear behaviour of Al-7 wt%Si-X wt% Mg alloys, **2020**, <https://doi.org/10.1016/j.matpr.2020.02.828>
8. A. Sai Kanishka, E. Gopinath, K. Sai Tharun, **Ajit Behara**, Srikar P, Homogenized Mixture (Ni-Al-hBN) Plasma Sprayed on Mild Steel by varying Spray velocity, *Materials Today: Proceedings*, **2020**, <https://doi.org/10.1016/j.matpr.2020.03.708>
9. B. Behera, P. Mallick, B. Swain, S. K. Patel, R. Roshan, **Ajit Behera**, Surface modified mild steel and copper using homogenized fly-ash + quartz + ilmenite by plasma technology, **2020**, <https://doi.org/10.1016/j.matpr.2020.04.526>
10. Priyabrata Mallick, Bikram Behera, Swadhin Kumar Patel, Biswajit Swain, Rakesh Roshan, **Ajit Behera**, Plasma spray parameters to optimize the properties of abrasion coating used in axial flow compressors of aero-engines to maintain blade tip clearance, *Materials Today: Proceedings*, **2020**, <https://doi.org/10.1016/j.matpr.2020.03.835>.
11. B. Behera, **Ajit Behera**, Splat analysis of plasma-sprayed (Al+Ni+h(BN)) homogenised mixture for improvement of abradable resistance on the aero-engine inner casing surface, *Materials Today: Proceedings*, **2020**, <https://doi.org/10.1016/j.matpr.2020.03.836>

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12. M. Priyadarshini, **Ajit Behera**, C. K. Biswas, B. Swain, S. Patel, Multi-objective optimization of WEDM process by hybrid methodology, *Materials Today: Proceedings*, 2020, <https://doi.org/10.1016/j.matpr.2020.03.321>
13. S. Das, V. Karthik, S. K. Pabi, Asit Behera, S. K. Patel, B. Swain, R. Roshan, **Ajit Behera**, Enhancement of thermal conductivity of Cu-Cr dispersed nanofluids according to multiscale modelling, *Materials Today: Proceedings*, 2020, <https://doi.org/10.1016/j.matpr.2020.03.330>.
14. M. Priyadarshini, **Ajit Behera**, B. Swain, S. Patel, Multi-objective optimization of EDM process for Titanium alloy, *Materials Today: Proceedings*, 2020, <https://doi.org/10.1016/j.matpr.2020.03.492>.
15. M. Priyadarshini, C. K. Biswas, **Ajit Behera**, Grey-Taguchi optimization of Wire-EDM parameters for P20 tool steel, ICMRE'19: Proceedings of the 5th International Conference on Mechatronics and Robotics Engineering, 2019, Pages 5-8, <https://doi.org/10.1145/3314493.3314506>.
16. M. Priyadarshini, C. K. Biswas, **Ajit Behera**, Wire Electro Discharge Machining of P20 Tool Steel, *Materials Today: Proceedings*, Volume 5, Issue 11, Part 3, 2018, Pages 25519-25523, DOI: [10.1016/j.matpr.2018.10.358](https://doi.org/10.1016/j.matpr.2018.10.358).
17. B. Swain, A. Patnaik, S. K. Bhuyan, K. N. Barik, S. K. Sethi, S. Samal, S. C. Mishra, **Ajit Behera**, Solid particle erosion wear on plasma sprayed mild steel and copper surface, *Materials Today: Proceedings*, Volume 5, Issue 9, Part 3, 2018, Pages 20403-20412, DOI: [10.1016/j.matpr.2018.06.415](https://doi.org/10.1016/j.matpr.2018.06.415).
18. A. Pattanaik, S. K. Bhyan, A. Chakraborty, S. C. Mishra, **Ajit Behera**, Dry Sliding Wear Behaviour of Micro oven Treated Fly Ash Reinforced Epoxy Composite using Extended Taguchi Approach Optimization, National Conference on Processing and Characterization of Materials, IOP Publishing, Conf. Series: *Materials Science and Engineering* 178, 2017, 012004, DOI: [10.1088/1757-899X/178/1/012004](https://doi.org/10.1088/1757-899X/178/1/012004)
19. A. Pattanaik, S. K. Bhuyan, S. K. Samal, **Ajit Behera**, S. C. Mishra, "Dielectric properties of epoxy resin fly ash composite", IOP Conf. Series: *Materials Science and Engineering*, 115, 2016, 012003 DOI: [10.1088/1757-899X/115/1/012003](https://doi.org/10.1088/1757-899X/115/1/012003).
20. **Ajit Behera**, S. Aich, Asit Behera, A. Sahu, Processing and characterization of magnetron sputtered Ni/Ti thin film and their annealing behaviour to induce shape memory effect, *Materials Today: Proceedings*, 4th International Conference on Materials Processing and Characterization, *Materials Today: Proceedings* 2 (2015) 1183-1192, <https://doi.org/10.1016/j.matpr.2015.07.030>
21. A. Sahu, **Ajit Behera**, Semi-solid processing and tribological characteristics of Al-Cu Alloy, *Materials Today: Proceedings*, 4th International Conference on Materials Processing and Characterization, 2 (2015) 1175-1182, <https://doi.org/10.1016/j.matpr.2015.07.029>.
22. **Ajit Behera**, A. Behera, S. C. Mishra, S. Pani, P. Parida, Air jet erosion test on plasma sprayed surface by varying erodent impingement pressure and impingement angle, 4th National Conference on Processing and Characterization of Materials, IOP Conf. Series: *Materials Science and Engineering*, 75 (2015) 012004, DOI: [10.1088/1757-899X/75/1/012004](https://doi.org/10.1088/1757-899X/75/1/012004).

National Conferences:

1. S. D. Kumar, S. Dewangan, S. K. Jha, S. K. Parida, **Ajit Behera**, 3D AND 4D printing in industry 4.0: trends, challenges and opportunities, <https://books.aijr.org/index.php/press/catalog/book/108/chapter/870>
2. R. Kumari, **Ajit Behera**, P. Bharti, D. K. Sethi, Tribological performance of heat treated 0.6% c steel, <https://books.aijr.org/index.php/press/catalog/book/108/chapter/877>
3. A. Dey, D. Roy, **Ajit Behera**, S. Aich, S. Ghosh, Multi-scale modeling of effect of substrate bias on Crystallinity of NixTi1-x thin films deposited using Magnetron Sputtering Technique, *52th National Metallurgists' Day and 68th annual technical meeting*, 2014 College of Engineering, Pune (COEP), 12-15 November (2014).
4. **Ajit Behera**, S. Aich, Nanostructured single- and double-bi-layered NiTi thin film shape memory alloy, *52th National Metallurgists' Day and 68th annual technical meeting*, College of Engineering, Pune (COEP), 12-15 November (2014).
5. **Ajit Behera**, S. Aich, Microstructural analysis of magnetron sputtered Bi-layered Ni-Ti thin film shape memory alloy, *51st National Metallurgists Day*, IIT (BHU), Varanasi, 12-15 November, (2013).

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6. S. Aich, **Ajit Behera**, S. Ghosh, "Simulation of Phase transformation behavior of NiTi doped with Cu during loading using classical molecular dynamics", *50th National Metallurgists' Day*, (2012).
7. **Ajit Behera**, S. C. Mishra, Low Cost Heusler Ferromagnetic Shape Memory Alloy, National Conference on Processing and Characterization of Materials, Department of Metallurgical & Materials Engineering, 2-3 December, National Institute of Technology, Rourkela (2011).
8. **Ajit Behera**, Asit Behera, S. C. Mishra, Cryogenic Technique for Processing Steel Treatment, National Conference on Processing and Characterization of Materials, Department of Metallurgical & Materials Engineering, 2-3 December, National Institute of Technology, Rourkela, (2011).
9. P. Parida, **Ajit Behera**, S. K. Swain and S. C. Mishra, "Characterization of nanoparticle through SEM, FTIR, XRD, & DSC", National Conference on Processing and Characterization of Materials, Department of Metallurgical & Materials Engineering, 2-3 December 2011, National Institute of Technology, Rourkela, (2011).
10. P. Parida, D. Dash, **Ajit Behera** and S. C. Mishra, "Preparation and characterization of Graft biopolymer to improve sustained release property", National Conference on Processing and Characterization of Materials, Department of Metallurgical & Materials Engineering, 2-3 December 2011, National Institute of Technology, Rourkela, (2011).
11. **Ajit Behera**, S. C. Mishra, Demand on Magic Metal, UGC Sponsored National Workshop on Innovative Experiments in Physics, 9-10 January 2012, Neelashaila Mahabidyalaya Rourkela, January 2012.
12. **Ajit Behera**, S. Swain, S. C. Mishra, The Natural Composite: spheroidal Graphite Iron, UGC Sponsored National Workshop on Innovative Experiments in Physics, 9-10 January 2012, Neelashaila Mahabidyalaya Rourkela, January 2012.
13. Asit Behera, **Ajit Behera**, "Microstructural Study of Compacted Graphite Iron Used In Automotive Industry", National Conference on Recent Advances in Science for Technology, RAST-2012, Organized by department of physics, mathematics and chemistry, Veer Surendra Sai University of Technology, Burla, February 27-28, 2012.
14. **Ajit Behera**, S. C. Mishra, "Analysis of Martensitic Transformation in Ni-Mn-Sn FSMA", *National Conference on Recent Advances in Science for Technology*, RAST-2012, Organized by department of physics, mathematics and chemistry, Veer Surendra Sai University of Technology, Burla, February 27-28, 2012.
15. **Ajit Behera**, S. C. Mishra, S. Rout, "Assurance of Quality Improvement for Tool Steel by Cryo-processing", National Conference on Recent Advances in Science for Technology, RAST-2012, Organized by department of physics, mathematics and chemistry, Veer Surendra Sai University of Technology, Burla, February 27-28, 2012.
16. Asit Behera, **Ajit Behera**, S. C. Mishra, "New Solution for Property Improvement of Automobile Parts", Advances in simulation & optimization Techniques in Mechanical Engineering, Organized by School of Mechanical Engineering, KIIT University, 18-19 february, 2012.
17. **Ajit Behera**, S. C. Mishra, "Property Optimization of Ferromagnetic Shape Memory Alloys with respect to Cost", Advances in simulation & optimization Techniques in Mechanical Engineering, Organized by School of Mechanical Engineering, KIIT University, 18-19 february, 2012.
18. **Ajit Behera**, S. C. Mishra, "Application of Fly-ash Composite in Plasma Surface Engineering", National Seminar on Waste To Wealth, Organized by Indian Institute off Metals-Bhubaneswar Chapter and SGAT-Bhubaneswar, 14-15 Dec, 2012.

SPONSORED RESEARCH PROJECT (R&D Projects)

1. **Project Title:** "Exploring the ways and means for maximize utilization of LD sludge, ESP dust form Sinter Plant and Blast Furnace area in Cement Industry by replacing the conventional raw materials", Sponsor: **SAIL** (Jan2019 - Jan 2022) (Completed).
2. **Project Title:** "Smart Materials fabrication by 4D printing additive manufacturing technique", Sponsor: **Maruthi Engineering India** (2019-2021) (Completed).
3. **Project Title:** "Additive Manufacturing of Aluminium based alloys and composites", **CRS Grant** (2020-2022) (Completed).

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4. **Project Title:** “Fabrication of Shape Memory alloy (SMA) using additive manufacturing and product utilization in automobile and Micro-electro-mechanical-system (MEMS) industries”, Sponsor: **Maruthi Engineering India** (2019-2024) (Completed).

CONSULTANCY PROJECT

1. **Project Title:** “Heavy metal analysis of NTPC fly-ash”, Sponsor: **National Thermal Power Corporation Limited (NTPC)**, 2020 (Completed).
2. **Project Title:** “Strengthening the fly-ash brick for f/c lining”, Sponsor: **General Electric (GE)**, 2020 (Completed).
3. **Project Title:** “Enhancement of existing of DRI Plant, SMS Plant, Capacitive Power Plant & Pellet Plant”, Sponsor: **M/S SHRI MAHAVIR FERRO ALLOYS PVT. LTD** (Completed).
4. **Project Title:** “Coke oven sludge analysis”, Sponsor: **SAIL, RSP** (Completed).
5. **Project Title:** Analysis and issuance of “No increase in pollution load” certificate for enhancement of existing pellet plant with beneficiation capacity from 8,00,000 TPA to 10,00,000 TPA”, Sponsor: **Envirocare Infrsolution Private Limited** (Completed).
6. **Project Title:** “Quality test of effluent treatment plant discharge”, Sponsor: **IDL Explosives Limited** (Completed).
7. **Project Title:** “No Increase in Pollution Load” Certificate for Capacity Enhancement of induction furnace”, Sponsor: **TPSL, Jharsuguda, Odisha** (Completed).
8. **Project Title:** “Analysis of Solid hazardous waste (fluoride based) generated from short blast dust”, Sponsor: **Preet Group, Chattishgarh** (Completed).
9. **Project Title:** “The performance evaluation of ESP, bag filter, online CEMS & Surveillance Cameras: Testing of input and analysis of output”, Sponsor: **TPSL, Jharsuguda** (Completed).
10. **Project Title:** “Analysis of enhancement of production capacity of DRI unit, Induction furnaces with NIPL”, Sponsor: **Patnaik Steels and Alloys Ltd.** (Completed).
11. **Project Title:** “Performance evaluation of ETP, STP, CEQMS, flow meters”, Sponsor: **NTPC** (Completed).

CONFERENCES, WORKSHOP, SHORT TERM COURSE CONDUCTED

1. Convener of “**1st National Conference on Indian Defense System and role of National Cadet Corps (NDSNCC-2023)**”, 26th-27th May, 2023.
 2. Convener of “**2nd International Conference on Processing and Characterization of Materials (ICPCM-2019)**”, 12th-14th December, 2019
 3. Convener of 5-days short term course on “**Process Metallurgy and its environmental impact**”, 21-25th Feb, 2019.
 4. Convener of Five days’ short term course on “**Advances in Materials**”, 21st-25th March, 2019.
 5. Convener of Five days’ workshop on “**High Temperature Materials (HTM-2019)**”, 18th-22nd April, 2019.
 6. Convener of Five days TEQIP-III sponsored National workshop on “**Aero-craft Processes and Aero-Materials**”, 23rd-27th, May 2019.
 7. Co-convener of workshop on “**Yoga and Life style management**” organized by extra-academic-activity, NCC, NIT Rourkela, 31st Aug-01st Sept, 2019.
 8. Co-Convener of “**4th National Conference on Processing and Characterization of Materials (NCPCM-2015)**”, 12th-13th Dec, 2015.
 9. Convener of National Seminar on “**Action & Attitude towards environmental protection**”, organized by extra-academic-activity, NCC, NIT Rourkela, 30th-31st July, 2022
 10. Treasurer, “**Metallo Carnival**” organized by Indian Institute of Metals, Rourkela, 09th-10th Nov, 2022
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INVITED TALK/KEYNOTE SPEAKER/ SESSION CHAIR IN VARIOUS CONFERENCES/WORKSHOP/ SHORT TERM COURSE

- **Keynote speaker**, "" in 1st International Conference on Advanced Technology in Material Science and Engineering (ICATMSE-24), 5th -6th April, 2024, <https://icatmse.com/keynote-speakers>
- **Invited speaker**, "**Metal 4D Printing: State-of-art**" in a workshop "3D Printing: A Technology With its Diverse Potential in Multidisciplinary Sectors (3DPTECH)", 19th-25th February **2024** ", organized by the Dept. of Mechanical Engineering, NIT Rourkela <https://www.nitrkl.ac.in/docs/Workshop/ME/14122023182612267B.pdf>.
- **Keynote speaker**, "**Shape Memory Alloy and their application**" in "1st International Conference on Artificial Intelligence, Advanced Materials, and Mechatronics Systems (AIAMMS-2023)", School of Engineering and Technology, JECRC University, Jaipur, India, November 3-4, **2023**, <https://conference.jecrcuniversity.edu.in/aiamms23/index.html>.
- **Invited speaker**, "**Metallurgical aspects on 4D Print technology and applications**", in Five Days National Workshop on 3D Printing: State-of-Art and Future Prospects (3DP-2023), 15th-19th July, **2023**, Department of Mechanical Engineering, National Institute of Technology, Rourkela.
- **Session Chair in** "International Conference on Intelligent Manufacturing And Energy Sustainability (ICIMES-2023)", Malla Reddy College of Engineering and Technology, Hyderabad, India, June 23-24, **2023**, <https://www.icimes.in/>.
- **Invited speaker**, "**Smart memory alloys**", Session 5 - Smart and Future Materials, Advanced Materials for Defence & Aerospace, 2022, 8-9 April **2021**, Centre For Joint Warfare Studies (CENJOWS).
- **Session Chair in** "International Conference on Intelligent Manufacturing and Energy Sustainability (ICIMES-2021)", Malla Reddy College of Engineering and Technology, Hyderabad, India, June 18-19, **2021**.
- **Keynote speaker** in International Webinar on "**Smart Material: Temperature-induced Shape Memory Alloys**", IRAJ International Conference, 04.04.2021, <http://webinar.iraj.in/>
- **Technical Speaker on** "**Global Utilization status of Fly ash**", "National Seminar on Waste to Wealth, Effective Utilization of Solid Waste of Steel Plants", 27/02/2021, Organized by The Institution of Engineers (India) in association with SAIL - Rourkela Steel Plant.
- **Guest speaker on** "**Global utilization of Fly ash**", Seminar on "Fly ash user meet", 02/02/2021 Darlipalli, Odisha
- **Invited speaker on** "**NiTi shape memory alloys**", Short Term Training Programme on "Smart Materials and Systems: Theory and Applications", sponsored by AICTE, 02/11/2020-07/11/2020, Dept. of Mechanical Engineering, C. V. Raman Global University, Bhubaneswar, Odisha.
- **Invited speaker on** "**Shape Memory Alloys: current and future industrialization**" webinar sponsored by AICTE, One Week Online Short Term Training Programme on "Recent Advances in Materials and Manufacturing (RAMM-2020)", , sponsored by AICTE, Organized by the Department of Mechanical Engineering, GVPC Engineering, New Delhi, 7th-12th September, **2020**.
- **Guest lecture**, One Week-Faculty Development Programme-National Webinar On, "Advances welding technology", Department of Mechanical Engineering, Jain University, from 04th-08th Aug, **2020**
- **Invited speaker on** "**Application of SMA in space Industries**", webinar sponsored by TEQIP-III on "Advances in Materials Processing and Characterization (AMPC-2020)", organized by the Department of Metallurgical and Materials Engineering, IGIT Sarang, 28th August-1st September **2020**.
- **Guest lecture on** "**Joining of smart materials with steel**", in one week faculty development program on "advanced welding technology", in Dept. of Mechanical Engineering at JAIN University, 4th-8th Aug, **2020**.
- **Invited speaker on** "**Role of Various Smart Materials in industrial application**", in Short Term Course sponsored by TEQIP-III on "Advances in Materials and Processing (AMP-2020)", organized by Indira Gandhi Institute of Technology, Sarang, 24th-28th February **2020**.
- **Keynote speaker on** "**Shape Memory Alloys Processing and Applications**", in "National Conference on Advanced Materials Technology and Processing" Organized by NIT Jamshedpur, 30th-31st Aug **2019**.
- **Keynote speaker on** "**NiTi Smart Alloys**" in "conference on science of engineering materials", Organized by North Odisha University, Keonjhar, 3rd-4th April, **2019**.

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- **Invited speaker** on "Smart materials with smart technology" in the conference "Recent advances in materials science and Technology (RAMST-19)" Organised by Govt. College of Engineering, Keonjhar, 30th-31st March, 2019.
 - **Invited speaker** on "*Application of Plasma Technology in Chemical Engineering*", Workshop on Application of chemical engineering in natural resources (AChENRI) Organized by Indira Gandhi Institute of Technology, Sarang. 18th July, 2018.
 - **Invited speaker** on "*Fly-ash generated from integrated steel plant: Waste to valuable products*", International Conference on "Industrial Impacts on Environment and Sustainable Development (IIESD-2018) Organised by Govt. College of Engineering, Keonjhar, 15-16th April, 2018.
 - **Invited speaker** on "*NiTi-based shape memory alloys*", Workshop on New Trends in Process Metallurgy, Material Processing and Characterization (NTPMPMC-2018) organized by VSSUT, Burla, 19-23rd March, 2018.
 - **Invited speaker** on "*Smart material: Shape memory alloys*" organized by The Institute of Engineers (IE-India), Rourkela chapter, 01.02.2018.
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SHORT TERM COURSES/WORKSHOP/CONFERENCE ATTENDED

- Presented in 76th Annual Technical Meeting (ATM) of Indian Institute of Metals (IIM-ATM 2022) and the International Symposium on "Accelerated Materials Development and Additive Manufacturing: Scientific and Technological Perspectives (AMDAM)" at Hyderabad, Telangana, Organized by IIM Hyderabad Chapter, 13th-16th Nov, **2022**.
 - Presented in int. conf. on **12th International Conference on Plasma Science & Applications**, University of Lucknow, India, 11th-14th Nov, **2019**.
 - Presented in 55th National Metallurgists' Day (NMD) and the 71st Annual Technical Meeting (ATM), BITS Pilani, K K Birla Goa Campus, **2017**.
 - Attended QIP Short Term Course (STC) and Continuing Education Programme (CEP) on "**Steel Technologies**" (Date: 02-09 March, **2017**) Organized by Department of Metallurgical Engineering, Indian Institute of Technology, Varanasi-221005.
 - "**Experimental Techniques in Extractive Metallurgy**", organized by IIT Banaras Hindu University, July 8-10, **2016**.
 - "**4th International conference on Thermo-Mechanical Simulation and Processing of Steels**", RDCIS, SAIL, Ranchi, February 10-12, **2016**.
 - "**Author workshop**" jointly organized by Springer and IIT Kharagpur, 12th February, **2015**.
 - "**Web scale discover services single window access to library e-resources**", organized by central library, IIT Khargpur, 10th January, 2014.
 - "**SciFinder and its new features**" held at IIT Kharagpur, 9th January, **2014**.
 - "**iiParadigms Europe**", Workshop Organized by iGroup Infotech India Pvt. Ltd. At Indian Institute of Technology, Khargpur, 8th January, **2014**.
 - IEEE workshop on "**MEMS, Microfluidics, Microsystems with Hands-on training in device simulation & Microfabrication process**", 4-6th July, 2013, at IIT Khargpur.
 - "**Publishing connect**", workshop conducted by Elsevier in association with IIT Kharagpur, at central library IIT Khargpur, 25th November, **2013**.
 - "**Entrepreneurship Awareness Camp**", Organized by Indian Society for Technical Education at Indira Gandhi Institute of Technology, 28-30th January, **2009**.
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EXTERNAL EXAMINER OF:

ANNA University

- **External Examiner**, PhD thesis and defense viva-voce, Center for nanoscience and technology, Anna University, Yr. **2018**.
- **External Examiner**, PhD thesis and defense viva-voce, Center for nanoscience and technology, Anna University, Yr. **2019**.

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NIT Suratkal

→ **External Examiner**, PhD thesis and defense viva-voce, Department of Mechanical Engineering, National Institute of Technology Karnataka, Surathkal, **2022**

NIFFT Ranchi

→ **External Examiner**, M.Tech Viva-voce and thesis evaluation, National Institute of Foundary and Forge Technology, Ranchi, Yr. **2018**.

Visvesvaraya Technological University (VTU), Karnataka

→ **External Examiner**, PhD thesis and defense viva-voce, Mechanical Engineering and Science, Visvesvaraya Technological University (VTU), Karnataka, Yr. **2022**

→ **External Examiner**, PhD thesis and defense viva-voce, Mechanical Engineering and Science, Visvesvaraya Technological University (VTU), Karnataka, Yr. **2023**

Bhabha Atomic Research Centre (BARC), Mumbai

→ **External Examiner**, PhD thesis and defense viva-voce, Physical and Mathematical Sciences, HBNI, Atomic & Molecular Physics Division, Bhabha Atomic Research Centre, Mumbai, **2023**

DISSERTATION GUIDANCE

Ph. D. Guidance

1. **Biswajit Swain**, Roll No. 516MM1011-Institute scholar (Supervisor- **Prof. Ajit Behera**) Area of Research: Analysis of microstructure, mechanical and superhydrophobic properties of atmospheric plasma sprayed NiTi alloy, (3rd Jan 2017-8th Jun 2022) (**Publication=11 SCI Journals+02 Scopus index Conf. Paper+ 03 Book Chapter**)
2. **Manisha Priyadarshini**, Roll No. 515ME1008-Institute scholar (Supervisor- Prof. C. K. Biswas, Co-supervisor- **Prof. Ajit Behera**) Area of Research: Wire Electro Discharge Machining of Cryotreated P20 tool steel, (06 Jan 2016-31 Dec 2021) (**No. of publication=04 SCI & 01 Scopus Journal+05 Scopus index Journal+ 01 Book Chapter**)
3. **Swadhin Patel**, Roll No. 517MM1002-Institute scholar (Supervisor- **Prof. Ajit Behera**) Area of Research: Evolution of Shape Memory Effect and Superelasticity in NiTi Shape Memory Alloys at High Temperature, (Enrolment Date: 24 Jul 2017) (**On-going, No. of publication=06**)
4. **Rakesh Roshan**, Roll No: 519MM1004-Institute scholar (Supervisor- **Prof. Ajit Behera**) Area of Research: NiTi high performance materials, (Enrolment Date: 29 Jul 2019) (**On-going, No. of publication=02**)
5. **Jagadish Parida**, Roll No: 519MM1002-Institute scholar (Supervisor- Prof. S. C. Mishra, Co-Supervisor- **Prof. Ajit Behera**) Area of Research: Influence of additive element on shape memory effect of NiTi smart alloy, (Enrolment Date: 29 Jul 2019) (**On-going, No. of publication=01**)
6. **Deepak Ku Sahoo**, Roll No: 517mm9008-Sponsored scholar (Supervisor- Prof. S. Sarkar, Co-supervisor- **Prof. Ajit Behera**) Area of Research: Utilization of alternate materials for clinker and cement manufacturing, (Enrolment Date: 03 Jan 2018) (**On-going, No. of publication=04**)
7. **Saroj Ku. Sahu**, Indian Exchanged scholar (Supervisor- R. Dalai VSSUT-Burla, Co-supervisor- **Prof. Ajit Behera**) Area of Research: Preparation of Ni-based superalloys and their physical characterization. (**On-going**)
8. **Priyabrata Mallick**, PhD executive scholar (Supervisor- **Prof. Ajit Behera**) Area of Research: Plasma processing Technology (Enrolment Date: 24 Aug 2020) (**On-going**)
9. **Bijoya Bhoi**, PhD executive scholar (Supervisor- **Prof. Ajit Behera**, Co-supervisor- Prof. S. Sarkar) Area of Research: Industrial solid waste utilization (Enrolment Date: 24 Aug 2020) (**On-going**)
10. **Debi Sahoo** PhD executive scholar (Supervisor- Prof. S. Murugan, Co-supervisor- **Prof. Ajit Behera**) Area of Research: Heat recovery from hot spring and use in thermal storage material (Enrolment Date: 01 Jan 2020) (**On-going**)
11. **Prakash Mohan**, β -phase stability and the mechanical properties of Ti-Mo alloy in addition with Zr and Fe, *PhD exchange student from UPV, Valencia, Spain* (Supervisor- Prof. Vicente Amigó Borrás). (**completed**) (**No. of publication from my lab. =01 SCI journal**)

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12. **Binayak Mishra**, Indian Exchanged scholar (Supervisor- S. K. Mohapatra, Co-supervisor- **Prof. Ajit Behera**) Numerical and Experimental Study of Equal Channel Angular Pressing of Al-6063 Aluminium Alloy, (**Ongoing**)

M. Tech Guidance

- **Dibya Spandan Patel** (720MM1022) (Supervisor-Prof. Ajit Behera), NiTi Nanodeposition of Si-semiconducting surface for MEMS application, (**Ongoing**)
- **Vishal Agarwal** (718MM1028) (Supervisor-Prof. Ajit Behera), Stopping and Range of Ions in Matter (SRIM) simulation of NiTi SMA, (**Completed with 01 publication**)
- **Amit Kumar** (220mm1481) (Supervisor-Prof. Ajit Behera), Characterization of temperature induced NiTi smart alloys, (**Completed**)
- **Shivani Nayak** (220mm1483) (Supervisor-Prof. Ajit Behera), Processing and characterization of NiTi thin film shape memory alloys, (**Completed**)
- **Saswat Kumar** (Roll No. 219MM1409) (Supervisor-Prof. Ajit Behera) Additive manufacturing by selective Laser melting (**Completed with 03 publication**)
- **Ayush Sinha** (Roll no: 716MM1119), (Supervisor-Prof. Ajit Behera) Characterization of 3D print honeycomb structured air-fuel nozzle of aircraft. (**Completed with 04 publication**)
- **Bikram Behera** (Roll No. 218mm1475), (Supervisor-Prof. Ajit Behera) Deposition of (Al+Ni+BN) homogenised mixture to improve abradable resistance on aero-turbine inner cover materials, **2020 (Completed with 04 publication)**.
- **M S V Ravi Kishore** (Roll No. 216MM2448), (Supervisor-Prof. Ajit Behera) Area of Research: Fly ash brick for high temperature metallurgical furnaces, **2019 (Completed with 03 publication)**
- **Pinky Gochhayata**, Exchanged Scholar, (Supervisor-Prof. I. Tripathy, IGIT-Sarang, and Co-supervisor-Prof. Ajit Behera) Repeated aging of Ni-based superalloys and effect on grain and grain boundary, 2019 (**Completed**)
- **Manikant Prasad** (Roll No. 217MM1260) (Supervisor-Prof. Ajit Behera) Synthesis and characterization of Nickel-Titanium shape memory alloy thin film, **2018 (Completed with 01 publication)**
- **Pruthwiraj Behera** (Roll No. 713MM1111), (Supervisor-Prof. Ajit Behera) Area of Research: Nickel-Titanium multi-layered thin film for Micro-Electro-Mechanical-systems, **2018 (Completed)**
- **Satya Prakash Rout**, Exchanged Scholar, (Supervisor-Prof. I. Tripathy, IGIT-Sarang, and Co-supervisor-Prof. Ajit Behera) Effect of temperature and pressure on diffusivity at the interface of NiTi-Steel, **2018 (Completed)**
- **Ravishankar Suman** (Roll No. 712MM1130), (Supervisor-Prof. Ajit Behera) Area of Research: Multi-layered Nickel-Titanium shape memory alloys using sputtering technique, **2017 (Completed with 01 publication)**.

MEMBERSHIP IN PROFESSIONAL BODIES

- Life Member- **Institute of Engineer (IE)**, Membership No: M1779014
- Life Member- **Indian Institute of Metals (IIM)**, Membership No: R02-LM-55711
- Life Member- **Materials Research Society (MRS)**, Membership No: LMB2789
- Life Member- **Indian Thermal Analysis Society (ITAS)**, Membership No: LM581
- Life Member- **Plasma Science Society of India (PSSI)**, Membership No: LM-1647
- **International Association of Advanced Materials (IAAM)**, Membership No: 875281912288
- **American Institute of Aeronautics and Astronautics (AIAA)**, Membership No: 984006
- Life Member- **Indian Institute of Mineral Engineers (IIME)**, Membership No: LM-1343
- American Chemical Society (ACS), Member Number: 31797756
- Association of Asia Pacific Physical Societies, Division of Plasma Physics (AAPPS-DPP): Member ID= 2572

COMMITTEE MEMBER IN INTERNATIONAL ORGANIZATION

- **Advisory Committee member**, “5th International Conference on Civil Engineering Trends and Challenges for Sustainability”, NMAM Institute of Technology, Dec 19th-20th, 2023, Nitte, Karnataka, <https://ctcs2023.in/>.
- **Co-Chairman of the session**, “Artificial Intelligence and IoT in Agriculture and Food Industry 4.0 (AIIAF-2023)” organized by The Institution of Engineers (India), Rourkela Local Centre in association with the Dept. of Food Process Engineering and Computer Science and Engineering, NIT on August 12-13, 2023.
- **Technical committee member**, 35th National Convention of Metallurgical and Materials Engineers and National Conference on Low-grade Ore and Waste: Challenges and Remedies (LOW: CR-2023), 21-22 January 2023, organized by The Institution of Engineers (India), Durgapur local center, Under the Aegis of Metallurgical and Materials Engineering Divisions Board, IEI.
- **Advisory Committee member**, 4th International Conference on Civil Engineering Trends and Challenges for Sustainability (CTCS-2022), 22nd-23rd December 2022, Organized by Nitte Mahalinga Adyanthaya Memorial Institute of Technology (NMAMIT), <http://www.ctcs2022.in/>
- **Scientific Committee member** in “Third International Conference on Advances in Material Science, 8-9 December 2022 organized by Technology Research and Innovation Centre, India and hosted at the DVVP College of Engineering, Ahmednagar, Maharashtra, India, www.icams.in.
- **Advisory Board member** in SCOPE database, <https://scopedatabase.com/about-scopedatabase>.
- **Advisory Board member** in 3rd International Conference on Recent Advances in Mechanical Engineering Research and Development (ICRAMERD-22), 24th-25th Sep 2021, Dept. of Mechanical Engineering, ITER, Siksha 'O' Anusandhan University, <https://www.icramerd.com/committees>.
- **Advisory Committee Member**, International Conference on Innovation in Design and Manufacturing Engineering (ICIDME-2021), GIET University, 22nd -23rd Jan, 2021, www.giet.edu/conf/.
- **Scientific Committee member** in “International Conference on Advances in Material Science” (ICAMS 2020) scheduled on 03rd Oct, 2020 at DVVP College of Engineering, Ahmednagar, Maharashtra, India. <https://technologycentre.co.in/icams/>.
- **Core-committee Members**, Advanced Engineering Materials Research Foundation (AEMRF), <http://www.aemrf.com/>.
- **Scientific Committee Member**, International Conference on Efficient Engineering Systems 2020 (ICEES) is organized by the Association of Engineering Researchers in Virtual Mode finishes on 30 June 2020, <http://icees.online/committee.php>.
- **Technical committee members**, The 2nd International Conference on manufacturing, material science and engineering, CMR Institute of Technology, Hyderabad. 7th-8th Aug, 2020 (ICMMSE 2020) <https://icmmse.in/technical-committee/>.
- **Organizing Committee** for the 3rd International conference on Academic Science and Engineering (ICASAE-2020), 14th - 15th Feb, 2020, Punjab, <https://icasae.in/index.php>.
- **Scientific advisory committee board member**, International Conference and Exhibition on Nanotechnology, 08th-10th June, 2020, Seoul, South Korea.
- **Advisory committee member** in “Recent Advances in material Science and Technology (RAMST-19)”, organized by Metallurgical & Materials Engineering, Govt. College of Engineering, Keonjhar, 2nd-3rd March, 2019.
- **International advisory board** in the conference “National conference on innovative structural materials” organized by Advanced Engineering Materials Research Foundation (AEMRF) 24th-25th Dec, 2018, Bhubaneswar.
- **International advisory board** in “International Conference on Industrial Impacts on Environment and Sustainable Development” (IIESD-2018) Organized by Govt. College of Engineering, Keonjhar, 15-16th April, 2018.

GUEST OF HONOUR/ SESSION CHAIR IN CONFERENCES

- Chief Guest on “World OZONE Day-2019” on 16/09/2019, organized by pollution control board, Rourkela.

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- Technical speaker on the theme “Fly ash utilization” in Ash User Meet, 6th August **2019** at NTPC Limited, Darlipali Super Thermal Power Project (2X800MW), Sundargarh.
- Addressed the theme “Youth and Technology” as a main guest in Rourkela on “National Youth Day”, 12.01.2018.
- Addressed the theme "The world ozone day" as Guest of honor in SAIL, RSP, Rourkela, **2018**.
- Technical Committee, 35th National Convention of Metallurgical and Materials Engineers & National Conference on Low-grade Ore and Waste: Challenges and Remedies (VLOW: CR - 2023)
- **Session chair**, 3rd International Conference on Recent Advances in Mechanical Engineering Research and Development, Siksha 'O' Anusandhan University, 12th-13th Aug, **2022**, <https://www.icramerd.com/committees>.
- **Session chair**, International Conference on Advances in smart materials, chemical and biochemical engineering (chemsmart-22) department of chemical engineering national institute of technology rourkela, 16-18 Dec, 2022, <https://www.chemsmart22.org/home>.

ADMINISTRATIVE RESPONSIBILITIES

Army wing Associate NCC Officer	May '18-Continuing
Member in the committee for administrative and technical staff training under TEQIP-III	Dec' 17-Dec'20
Departmental Academic Committee (DAC)	July' 18-continuing
PIC-Library (MM Dept.)	July' 18- July' 23
Fund Allocation committee member (MM)	July'20- July 22
Faculty advisor for M. Tech 1st year	July' 15- July' 16
Central Library Purchase committee member	July' 19- July 21
PIC of Mystique Club	Mar' 19-continuing
CO-Treasurer, NIT Rourkela Alumni Association	Mar' 19-21, Mar
CO-Treasurer, Indian Institute of Metals (IIM, Rourkela Chapter)	Oct' 20-23, Mar
Technical committee member (The Institute of Engineer)	July 21- July 23
FTBI steering committee members	July'22-Continuing
Faculty Advisor for the academic year: UG/PG 1st year	2022-23
Faculty Advisor Chess Club, NIT Rourkela	Aug'23-Continuing
Faculty Advisor, Vivekananda Club, NIT Rourkela	Aug'23-Continuing

OUTREACH ACTIVITY RESPONSIBILITIES

Honorary Secretary , The Institution of Engineering, Rourkela Center	Oct' 23- Oct'25
Advisory committee member of the GIET, Bhubaneswar, GIET University, Gunupur-765022	July' 20-Continuing
Core Trust Member in Manaba Seba Kendra, Rourkela	Dec' 17-continuing
Member in Scientific temper society, Rourkela	July' 18-continuing
Member in Anusandhan Prakosh, Odisha Pachim	Oct' 23-continuing
State General Secretary , Training, ABGP	Mar 24-Continuing

LABORATORIES HANDLED

- Thermal Analysis laboratory
- Mineral Dressing laboratory
- Basic Oxygen Furnace Sludge Processing laboratory
- Additive manufacturing laboratory

EXTRA CURRICULAR ACCOLADES

- “**Blue Belt**” achiever in Martial Arts
- Recipient of Grade ‘**C**’ **Certificate** at NCC.

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- Active participant of **Blood Donation** Campaigns (5th times up to 2020).
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PERSONAL INFORMATION

Date of Birth: 28th May 1987

Marital Status: Married

Hobbies: Playing Badminton, Listening to Music

Languages Known: English, Hindi, Oriya, and Bengali.

Ajit Behera